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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/944,189	09/04/2001	Akihiko Ito	110314	1196

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EXAMINER

TRAN, HENRY N

ART UNIT	PAPER NUMBER
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2629

DATE MAILED: 04/21/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/944,189

Applicant(s)

ITO ET AL.

Examiner

Henry N. Tran

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 04 September 2001.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-5 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-5 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 04 September 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 6-11-02
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other:

DETAILED ACTION

This Office action is a follow up action in response to the Petition Decision of withdrawing the holding of abandonment of the present application mailed 12/3/04.

Information Disclosure Statement

1. The examiner has considered the documents listed in forms PTO-1449 submitted with the Information Disclosure Statements (IDSs) received 2/28/06, 7/29/05 and 6/11/02 (see the attached forms PTO-1449).

Specification

2. The specification is objected to as failing to provide proper antecedent basis for the claimed subject matter. See 37 CFR 1.75(d)(1) and MPEP § 608.01(o).

The following claimed terms do not appear in the specification: “subfield number setting circuit” recited in the base claims 3 and 4.

Correction of the following is required:

Drawings

3. The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the “subfield number setting circuit” recited in the base claims 3 and 4 must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet,

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even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Claim Rejections - 35 USC § 112

4. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

5. Claims 1-5 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention. The method of selectively setting a number of subfields of claim 1 and the subfield number setting circuit of claims 3-5 have not been disclosed. In Fig. 1, the timing signal generating circuit (200) comprising the DY selecting circuit (Fig. 4) further comprising the start pulse generating circuit (Fig. 5) is the closest disclosure, however it is apparent the timing signal generating signal is lacking circuitry

necessary for one of ordinary skill to make or use this invention. The correlation between figures 4 and 5 is not apparent. Figure 5 shows inputs (Ds0...Ds6), the origin of which are not disclosed.

Claim Rejections - 35 USC § 102

6. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

7. Claims 1 and 2 are rejected under 35 U.S.C. 102(e) as being anticipated by US Patent 6,127,991 to Uehara et al. Uehara et al. (Fig. 2 & 3) teaches a display arranged in a matrix (15) to perform a gray scale (Col. 3, Line 41), selecting number of subfields (29), dividing a frame into subfields (Fig. 9), controlling on or off each of the pixels (Col. 4, line 34), providing pixels in association with each of the intersection of a plurality of scanning lines (19, 20) and a plurality of data lines (21), and supplying a scanning signal sequentially (Col. 2, Line 7).

8. Claims 1 and 2 are rejected under 35 U.S.C. 102(b) as being anticipated by Tajima et al (U.S. Patent No. 5,818,419, hereinafter referred to as "Tajima").

9. Regarding claim 1, Tajima teaches a method of driving an electro-optical apparatus (1) in which a plurality of pixels (10) arranged in a matrix perform a gray scale display, said method of driving an electro-optical apparatus comprising: selectively setting a number of subfields within a frame using a subfield number setting circuit (50) in accordance with a signal (SEL) specifying a number of gray scale levels; dividing said frame into the specified number of subfields; and controlling on or off of each of the pixels in each of said subfields in accordance with the gray

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scale level of the pixels; see Figs. 1-3, 35 and 37; col. 8, lines 25-31, line 65 to col. 9, line 8, lines 50-52; col. 10, line 63 to col. 11, line 5.

10. Regarding claim 2, Tajima further teaches the driving method including: providing said pixels (10) in association with each of the intersections of a plurality of scanning lines (14 and 15) and a plurality of data lines (16), so that when a scanning signal is applied to the associated scanning line, the pixels are turned on and off according to the voltages applied to the associated data line; and supplying, for each of said subfields, said scanning signal sequentially to each of said scanning lines and supplying a signal which specifies on or off in accordance with the gray scale level for each of the pixels to each of the data lines corresponding to each of the pixels; see Fig. 37; and col. 1, line 63 to col. 2, line 20.

Claim Rejections - 35 USC § 103

11. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

12. Claims 3-5 are rejected under 35 U.S.C. 103(a) as being unpatentable over “Tajima” in view of Kanoh et al (U.S. Patent No. 6,806,859, hereinafter referred to as “Kanoh”)

Tajima further teaches generally all, including a drive circuit comprising a scanning line drive circuit (3, 4, and 5); a data line drive circuit (6) and a subfield number setting circuit (50) for driving the electro-optical display apparatus (1); see Figs. 1 and 2. Although, Tajima does not teach: an electro-optical apparatus which drives pixels that includes pixel electrodes disposed in association with each of intersections of a plurality of scanning lines and a plurality of data

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lines, and switching elements provided in association with each of said pixel electrodes.

However, Tajima does teach that the driving apparatus and method can be applied not only to a PDP display device, but also to an ordinary flat panel display device, such as an LCD device.

Kanoh teaches an electro-optical LCD apparatus which drives pixels that includes pixel electrodes $P_{i,j}$ disposed in association with each of intersections of a plurality of scanning lines Y_i and a plurality of data lines X_j and switching elements $TFT_{i,j}$ provided in association with each of said pixel electrodes; see Figs. 8 and 9; col. 1, lines 40-51. It would have been obvious to one of ordinary skill in the art at the time the invention was made to utilize the active matrix LCD device as taught by Kanoh for the Tajima display device because this would provide an improved display system capable of providing a multi-scan display at different vertical synchronization frequency for displaying a high picture quality; see Tajima, col. 3, lines 40-44; and col. 4, lines 20-30. By this rationale, claims 3-5 are rejected.

Conclusion

13. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. The following US Patent is cited to further show the state of the art in gray scale display driving using subfields:

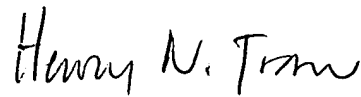
US Patent 6,317,104 to Kasahara et al.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Henry N. Tran whose telephone number is 571-272-7760. The examiner can normally be reached on M-F 8:00-4:30.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, RICHARD A. HJERPE can be reached on 571-272-7691. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 571-272-7361.

A handwritten signature in black ink that reads "Henry N. Tran". The signature is written in a cursive, flowing style.

Henry N Tran
Primary Examiner
Art Unit 2629

HT
4/19/06